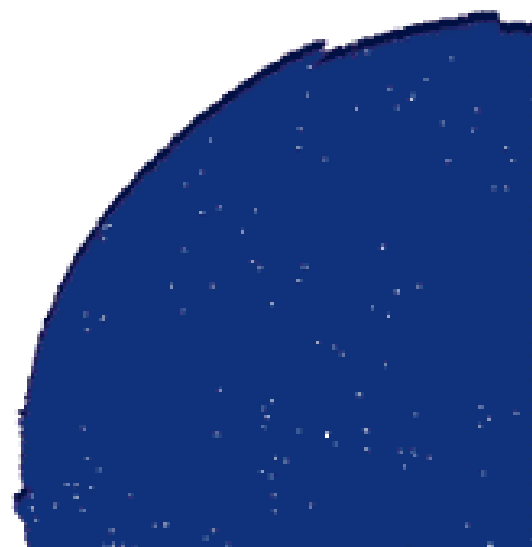


**Recommendations on the implementation of last drop
sharing of the last part on optical fibre networks**



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Law no. n° 2008-776, of 4 August 2008, on modernising the economy instils a system that balances the rights and obligations of operators deploying ultra-fast broadband. On the one hand, the instalment of fibre on the premises has been facilitated for operators, and even required of new property developers. On the other hand, the operator installing fibre on the premises (building operator) is responsible to the property owner for all operations performed on the network on the private property, and must fulfil an obligation to mutualise its installation, allowing third-party operators to provide ultra-fast broadband services to the building's residents under non-discriminatory conditions.

As concerns this last point, Article L. 34-8-3 of the French postal and electronic communications code, CPCE (*Code des postes et des communications électroniques*) stipulates that:

"Any entity that has established or that is operating an optical fibre ultra-fast broadband electronic communications line in an existing building which makes it possible to serve an end user must satisfy all reasonable requests from operators for access to said line, in view of providing electronic communications services to this end user.

Except in cases defined by the electronic communications and postal regulatory authority, access is to be provided under transparent and non-discriminatory conditions from a point located outside the limits of the private property, and which allows third-party operators to connect to it, under reasonable economic, technical and access conditions. Any refusal to provide this access must be justified."

The Law also mandates ARCEP to set the technical and tariff-related terms of this shared access, whether on the initiative of one of the parties as part of a dispute settlement, in the manner and under the terms provided for by Article L. 36-8 of the CPCE, or through the adoption of a decision with general application, following approval from the Minister responsible for electronic communications, pursuant to Article L. 36-6 of the CPCE.

Following the feedback received during the public consultation launched in May 2008 concerning the deployment and sharing of the last part of the last drop on fibre networks, the Authority wishes to issue its preliminary recommendations on the implementation of this sharing of the last part. The goal is to enable the first deployments to get underway in several large cities, without prejudice to subsequent recommendations which may be issued based on indispensable feedback from players that have gained experience.

In theory, satisfying the obligation to share access to the network encompasses several dimensions which are addressed later in this document:

- the supply of connections, which may require the intervention of the building operator (e.g. landing connection, risers);
- the location of the shared access point(s) and, more generally, the building operator's methods for connecting to the network, including, if applicable, related services such as hosting at the shared access point, cable connection and abutment;
- the type of sharing of the last part (e.g. optical cable splicing, passive access with cross-connection, activated offer, multi-fibre);
- the provision of prior information enabling third-party operators to identify eligible buildings and dwelling units, and to connect to the building operator's network within a non-discriminatory time frame.

Supply of connections

In accordance with the Law, the building operator is responsible for all indoor fibre-related operations. This includes not only installation and maintenance, but also any procedures needed to enable sharing of the last part. The goal is to allow the property owner to have only a single contact to communicate with, while ensuring that residents benefit from competition between ultra-fast broadband providers.

This applies notably to the installation of landing connection, in cases where the building operator did not do so at the outset. Here, it is important that the customer need only communicate with the commercial operator/service provider supplying her subscription. Furthermore, the building operator must not have to shoulder overly burdensome operational constraints on the service provider's behalf, and scheduling its service calls in particular. And, finally, it is important that the service provider be able to differentiate the services it is offering the customer when installing the optical connection in the customer's home. This is particularly important as optical fibre rollouts will enable the emergence of new services.

Multilateral efforts made it possible to pinpoint the principles to be applied to sub-contractors in order to satisfy these imperatives: on the one hand, landing connection is on the commercial operator's initiative; on the other hand, the building operator guarantees that the service provider can install the landing connection under non-discriminatory technical and economic conditions, whether it be by employing its sub-contractor or another entity contracted to perform the work. These principles were upheld by the results of the public consultation.

Location of the shared access point

The shared access point refers to the location at which the building operator provides access to its network to other operators. The location of this point (more or less "high up the network" in relation to the subscriber; located inside the building or accessible on public property) to a great extent determines third-party operators' actual capacity to connect to the building operator's network and so to provide services to the building's residents.

The Law on modernising the economy stipulates that the shared access point must be in a location "*enabling third-party operators' actual connection, under reasonable economic, technical and access conditions,*" situated, without exception, outside the private property.

The location of the shared access point is a new issue that was not addressed by broadband regulation, which relates to access to an existing network. As concerns fibre, local circumstances have a considerable influence on the economic equation of rollouts, and may result in disparate rules applied in different parts of the country. In addition, the determination of shared access points may involve a certain degree of coordination in operators' rollouts to avoid lasting gaps in coverage as much as possible.

The results of the public consultation confirm that entering buildings is a major cost item. On the whole, it would not be economically sound, if not impossible in practice given the scarcity of civil engineering between the last manhole and the building, to have every operator entering the building with its own cable. Having the shared access point at the entrance to the building would thus not be viable, except in the special case of large buildings allowing sufficient economies of scale, in a very densely populated area.

In all other cases, the location of the mutualised access point will depend on the population density and the type of housing. The Authority has today published a topological survey performed by the firms PMP and Quatrec. It reveals that, outside very densely populated areas, it would be inefficient to deploy several parallel networks up to shared access points located too close to the buildings. Added to this is the fact that the economic area for replicating networks is more limited, from a structural standpoint, in more sparsely populated zones.

In light of these factors, the shared access point could be located near the buildings (at street level or at the foot of large buildings) in the most densely populated zones (e.g.

the city of Lyon), and must be further away in other cases, most likely at the main thoroughfares for a city with an average population density (e.g. Besançon), to be able to serve an entire neighbourhood.

Type of sharing of the last part

Beyond the issue of location, not all shared access solutions are compatible with the different operators' technological choices, and do not require them to assume the same level of operational constraints. None of the players' initial solutions are satisfactory in this respect.

In particular, the solutions employing cross-connection points, whether located at the foot of the building or on public property (street cabinets or boxes on the building's facade) require repeat service calls and this by or on behalf of a host of players. This type of situation does not occur with the copper network, which gives rise to questions over the accessibility and future viability of the installations, and over how compatible the processes are with a mass market solution.

Given the uncertainties, the Authority recommends that the first operator equipping a building offer to install additional fibre in the last drop on behalf of other operators, onto which they will be able to splice their connection. The corresponding cost would be shared from the outset between the interested parties. When applicable, this option would act as a complement and not an alternative to the sharing of the last part solutions already planned by the operators.

The goal is therefore to define a common minimum for all operators that is compatible with all network configuration, without creating any significant constraints. Because of its limited additional cost, installing extra fibre appears to be a future-proof best practice.

Prior information

Generally speaking, to be able to make relevant choices about their rollouts and commercial offerings, operators that have signed wholesale offers must have access to prior information on these offers, and within a reasonable time frame. In the case of indoor fibre installations, the danger would be in allowing the building operator to gain an undue competitive advantage by keeping the information to itself. Multilateral efforts made it possible to define the principles for the exchange of information between operators which have signed sharing of the last part agreements for the designated or equipped buildings, which would help limit this danger from occurring.

First, the building operator must provide third-party operators with information about the building, and this under non-discriminatory conditions. Initially, typically within a month of receiving the property owner's approval, the building operator must transmit preliminary, general information (building address, schedule completion date for the work, etc.), which will be completed by more specific information after the agreement has been signed (number of units, fibre location, work status, corresponding shared access point, etc.).

Furthermore, to allow operators benefitting from shared access to know how to connect to the building, and so to scale their network in consequence, the operator installing the shared access point must provide information on this point (code, address, type of location, technical characteristics, etc.). The transmission of this information must be within a reasonable time frame prior to the start of commercial operations for the shared access point, to allow the other operators to connect to it. Prior notice of three months appears to be a reasonable time frame, given the practical aspects of broadband wholesale offers.

These principles were confirmed by the results of the public consultation. They must be implemented without delay.